

EXECUTIVE SUMMARY

This Approved Navy Training System Plan (NTSP) addresses the continuing development and forthcoming introduction of the MK-105 MOD 4 Magnetic Minesweeping System into the Navy inventory. The program is currently in acquisition Phase III (Production, Fielding/Deployment, and Operational Support).

The MK-105 MOD 4 Magnetic Minesweeping System, hereafter referred to as the MK-105 MOD 4, is an upgrade of the MK-105 MOD 2 Magnetic Minesweeping System that is currently used in the Fleet. The system is a remotely controlled, helicopter-towed platform used in Airborne Mine Countermeasures (AMCM). It is designed to provide a reliable and safe method of detonating influence mines. MK-105 MOD 4 System operations can be conducted from aviation-type ships [Amphibious Assault Ship Landing Helicopter Assault (LHA), Amphibious Assault Ship Landing Helicopter Dock (LHD), Mine Countermeasure Support (MCS), Landing Platform Dock (LPD), Amphibious Transport Dock Ship (LSD), and Aircraft Carrier (CV)], ramps, docks, piers, and prepared beaches.

Engineering Change Proposals 105-81 and 105-82 are incorporated when the MK-105 MOD 2 system goes through Scheduled Depot Level Maintenance, changing its designation from the MK-105 MOD 2 Magnetic Minesweeping System to the MK-105 MOD 4 Magnetic Minesweeping System.

There will be three levels of maintenance for the MK-105 MOD 4, as outlined in the Naval Aviation Maintenance Program, OPNAVINST 4790.2G. Navy personnel from the aviation ratings with Navy Enlisted Classification 8391 will perform organizational and intermediate level maintenance. The manufacturer will perform depot level maintenance. Manpower requirements will remain unchanged by the introduction of the MK-105 MOD 4.

Follow-on maintenance and operator training for the MK-105 MOD 2 weapon system currently in the fleet, is taught at Maintenance Training Unit 1031, Naval Air Maintenance Training Unit, Naval Station (NS) Norfolk, Virginia, and the AMCM Weapon Systems Training School, NS Norfolk, Virginia. Follow-on MK-105 MOD 4 operator and maintenance training will be conducted by the same organizations.

TABLE OF CONTENTS

		Page
Executive	Summary	i
List of Ac	ronyms	iii
Preface		V
PART I	- TECHNICAL PROGRAM DATA	
A	Nomenclature-Title-Program	I-1
В	Security Classification	I-1
C		I-1
D	System Description	I-2
E.	Developmental Test and Operational Test	I-2
F.	Aircraft and/or Equipment/System/Subsystem Replaced	I-2
G	Description of New Development	I-2
Н	Concepts	I-5
I.	Onboard (In-Service) Training	I-17
J.	Logistics Support	I-19
K	Schedules	I-20
L.	Government Furnished Equipment and Contractor Furnished Equipment	
	Training Requirements	I-20
M	. Related NTSPs and Other Applicable Documents	I-21
PART II	- BILLET AND PERSONNEL REQUIREMENTS	II-1
PART II	I - TRAINING REQUIREMENTS	III-1
PART IV	- TRAINING LOGISTICS SUPPORT REQUIREMENTS	IV-1
PART V	- MPT MILESTONES	V-1
PART V	- DECISION ITEMS/ACTION REQUIRED	VI-1
PART V	II - POINTS OF CONTACT	VII-1

LIST OF ACRONYMS

AC Alternating Current

AD Aviation Machinist's Mate
AE Aviation Electrician's Mate

AIMD Aircraft Intermediate Maintenance Department

AMCM Airborne Mine Countermeasures

AMH Aviation Structural Mechanic, Hydraulics AMIST Aviation Maintenance In-Service Training AMS Aviation Structural Mechanic, Structures

AMTCS Aviation Maintenance Training Continuum System

AOB Average Onboard

AT Aviation Electronics Technician

AWSTS Airborne Mine Countermeasures Weapon Systems Training

School

CBT Computer-Based Training
CIN Course Identification Number

CINCLANTFLT Commander In Chief, U.S. Atlantic Fleet CNET Chief of Naval Education and Training

CNO Chief of Naval Operations

COMHELTACWINGLANT Commander, Helicopter Tactical Wing, U.S. Atlantic Fleet

CSS Coastal System Station

CV Aircraft Carrier

ECP Engineering Change Proposal

EDO Corporation, Marine and Aircraft Systems

(Manufacturer and Technical Development Activity)

FY Fiscal Year

IETM Interactive Electronic Technical Manual ILSP Integrated Logistics Support Plan IPB Illustrated Parts Breakdown

LHA Amphibious Assault Ship Landing Helicopter Assault LHD Amphibious Assault Ship Landing Helicopter Dock

LPD Landing Platform Dock LPH Amphibious Assault Ship

LIST OF ACRONYMS

LSD Amphibious Transport Dock Ship

MCS Mine Countermeasure Support

MP Maintenance Plan

MPT Manpower, Personnel, and Training

MTIP Maintenance Training Improvement Program

MTU Maintenance Training Unit MUW Mine and Undersea Warfare

NA Not Applicable

NAMTRAU Naval Air Maintenance Training Unit

NAVPERSCOM Naval Personnel Command NEC Navy Enlisted Classification

NS Naval Station

NTSP Navy Training System Plan

OPO Office of the Chief of Naval Operations Principal Official

PEO Program Executive Officer
PMS Program Manager, Surface

PQS Personnel Qualification Standards
PSS Performance Support System

RFT Ready For Training

SDLM Scheduled Depot Level Maintenance

SRA Shop Replaceable Assembly

TBD To Be Determined TD Training Device

TTE Technical Training Equipment

WRA Weapon Replaceable Assembly

PREFACE

This Approved Navy Training System Plan (NTSP) for the MK-105 MOD 4 has been prepared to update the Draft MK-105 MOD 4 Navy Training System Plan, (N85-NTSP-P-30-9902/D), dated April 1999 and complies with guidelines set forth in the Navy Training Requirements Documentation Manual OPNAV Publication P-751-1-9-97. Changes from the Draft NTSP to the Approved NTSP primarily include updated program information, points of contact, and the addition of follow-on training requirements for the MK-105 MOD 4 Magnetic Minesweeping System, identifying Maintenance Training Unit (MTU) 1031, Naval Air Maintenance Training Unit (NAMTRAU), Naval Station (NS) Norfolk, Virginia, as the follow-on organizational and intermediate maintenance training site. It incorporates comments received on the April 1999 Draft version.

V

PART I - TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

- 1. Nomenclature-Title-Acronym. MK-105 MOD 4 Magnetic Minesweeping System
- **2. Program Element.** 73SO, LI 424800

B. SECURITY CLASSIFICATION

- 1. System Characteristics Unclassified

C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS

OPNAV Principal Official (OPO) Program Sponsor	(N752)
OPO Resource Sponsor	(N759)
Developing Agency	MS210)
Training Agency CINCLA	NTFLT CNET
Training Support Agency	PMS210)
Manpower and Personnel Mission Sponsor	
Director of Naval Training	IO (N7)

D. SYSTEM DESCRIPTION

- 1. Operational Uses. The MK-105 MOD 4 is a remotely controlled, helicopter towed, hydrofoil mounted Airborne Mine Countermeasures (AMCM) System designed to provide a reliable and safe method of detonating magnetic influence mines. System functions are controlled from the helicopter. MK-105 MOD 4 System operations can be conducted from aviation-type ships [Amphibious Assault Ship Landing Helicopter Assault (LHA), Amphibious Assault Ship (LPH), Amphibious Assault Ship Landing Helicopter Dock (LHD), Mine Countermeasure Support (MCS), Landing Platform Dock (LPD), Amphibious Transport Dock Ship (LSD), and Aircraft Carrier (CV)], ramps, docks, piers, and prepared beaches.
- **2. Foreign Military Sales.** There are currently no plans for Foreign Military Sales of the MK-105 MOD 4.
- **E. DEVELOPMENTAL TEST AND OPERATIONAL TEST.** Developmental Test and Operational Test was not required on the MK-105 MOD 4. The MK-105 MOD 4 was the result of two Engineering Change Proposals (ECPs). A Performance and Suitability Evaluation was successfully completed on the prototype by the manufacturer [EDO Corporation at: http://www.edocorp.com/)] and Coastal System Station (CSS), Panama City, Florida, in June 1995. The Factory/First Article Test was completed by EDO Corporation and CSS.
- **F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED.** The MK-105 MOD 4 will replace the MK-105 MOD 2 Magnetic Minesweeping System currently in use.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. The MK-105 MOD 4 is an upgrade of the MK-105 MOD 2 Magnetic Minesweeping System. Figure I-1 depicts the MK-105 MOD 4 Seaborne Equipment Platform. The MK-105 MOD 4 functions are controlled from the helicopter. A Turbo Generator mounted on the Seaborne Platform provides the output power required for mission minesweeping. The turbo generator consists of a gas turbine engine, speed reduction gearbox, and Alternating Current (AC) generator. The AC Generator output is routed to an alternator rectifier subsystem. Electrical current from the alternator-rectifier subsystem flows through a sweep cable array that trails from the hydrofoil platform with seawater completing the electrical circuit. The electrical current produces a magnetic field in the water that detonates magnetic influence mines. To ensure maximum sweep effectiveness and flexibility, the system is designed to produce either a constant or a pulsed current output that is controlled by the Control Programmer located in the helicopter. When an Acoustic Minesweeping device (MK-104) is attached to the magnetic sweep array, the resultant magnetic and acoustic influence field outputs will actuate magnetic and combination magnetic-acoustic influence mines.

2. Physical Description. For the physical dimensions and characteristics of the MK-105 MOD 4 System see Figure I-1, Table I-1, and Table I-2.

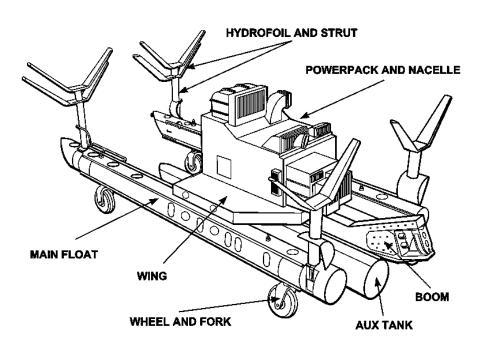


FIGURE I-1. MK-105 MOD 4 SEABORNE EQUIPMENT PLATFORM

TABLE I-1: MK-105 MOD 4 CHARACTERISTICS				
DESCRIPTION	CHARACTERISTICS			
Foilborne Length	26' 10-5/8"			
Ground Configuration Length	28' 9-1/4"			
Foilborne Width	21' 1-1/4"			
Ground Configuration Width	16' 10"			
Foilborne Height (less Retrieval Rig)	15' 2-1/8"			
Ground Configuration Height (less Retrieval Rig)	12' 1-1/2"			
Net Weight	8360 pounds			
Fuel Capacity	1292 pounds (190 gallons)			
Usable Fuel	1115 pounds (164 gallons)			

TABLE I-1: MK-105 MOD 4 CHARACTERISTICS					
DESCRIPTION	CHARACTERISTICS				
Gross Weight	9750 pounds				
Maximum Operational Speed	25 knots				
Maximum Operational Sea State	4				
Maximum Power	350 kilowatts				
Maximum Current	3500 amps				

TABLE I-2: MAJOR COMPONENT CHARACTERISTICS FOR THE MK-105 MOD 4 MAGNETIC MINESWEEPING SYSTEM							
NOMENCLATURE	HEIGHT (INCHES)	WIDTH (INCHES)	DEPTH (INCHES)	WEIGHT (POUNDS)			
Main Float Assembly on Wheels	60	30	294	810			
Auxiliary Float Assembly	29	26	198	280			
Wing Assembly	21	134	112	750			
Hydrofoil, Upper	50	89	18	150			
Hydrofoil, Lower, Forward	34	88	12	104			
Hydrofoil, Lower, Aft	34	88	14	180			
Retrieval Rig Installed	124	131	38	350			
Retrieval Rig Stowed	12	131	124	350			
Airborne Control Programmer	27	43	18	75			
Platform Controller	25	18	27	113			
Sweep Boom	43	30	129	745			
Nacelle and Ducts	73	80	73	428			
Aft Bulkhead and Generator Enclosure	47	72	17	146			
Power Pack	43	65	97	2436			
Gas Turbine Engine	28	22	57	403			
AC Generator	19	17	31	475			

TABLE I-2: MAJOR COMPONENT CHARACTERISTICS FOR THE MK-105 MOD 4 MAGNETIC MINESWEEPING SYSTEM							
NOMENCLATURE	DEPTH (INCHES)	WEIGHT (POUNDS)					
Speed Reduction Gearbox	24	29	20	244			
Tow and Electrical Cables	0	Length: 450 feet 700 Diameter: 2.0 inches					
Cable Assembly, Magnetic Sweep	System weigh	System weight: 2850 pounds					
S-Cable	Length: 450 fe	Length: 450 feet, Diameter: 3.7 inches					
Electrodes	Length: 150 feet, Diameter: 3.0 inches						
Pigtails 2 each 1 each	Length: 6 feet, Diameter: 2.4 inches, Weight: 47.5 pounds Length: 8 feet, Diameter: 2.4 inches, Weight: 63.0 pounds						

- **3. New Development Introduction.** The MK-105 MOD 4 is the result of two modifications to the existing MK 105 MOD 2. ECPs 105-81 and 105-82 are incorporated when the MK-105 MOD 2 goes through Scheduled Depot Level Maintenance (SDLM) changing its designation from the MK-105 MOD 2 Magnetic Minesweeping System to the MK-105 MOD 4.
- **4. Significant Interfaces.** There will be no significant interfaces with or impacts on other systems, subsystems, or equipment while replacing the MK-105 MOD 2 with the MK-105 MOD 4.
- **5. New Features, Configurations, or Material.** The MK-105 MOD 4 improved features include two additional floats for improved seaworthiness and stability, increased fuel capacity for longer missions, and a larger engine and AC generator to increase the effectiveness of the sweep cable magnetic field against magnetic mines.

H. CONCEPTS

- 1. Operational Concept. The MK-105 MOD 4 is launched or recovered from various surface ships, ramps, docks, and improved beaches utilizing ground and Rigid Hull Inflatable Boat support personnel. The MK-105 MOD 4 is towed and remotely operated from an AMCM configured MH-53E Helicopter manned by two pilots and four crewmembers. Tow of the MK-105 MOD 4 can be transferred between two AMCM configured helicopters to increase time on station. System tow can also be transferred from the helicopter to suitably equipped ships to enhance retrieval flexibility.
- **2. Maintenance Concept.** The maintenance concept for the MK-105 MOD 4 is based on the three levels of maintenance as outlined in the Naval Aviation Maintenance Program, OPNAVINST 4790.2G.

a. Organizational. An operating unit on a day-to-day basis in support of its own operations normally performs organizational maintenance actions. These actions are generally classified as inspections, servicing, handling, and on-equipment corrective maintenance. Personnel from the aviation maintenance ratings with Navy Enlisted Classification (NEC) code 8391 perform organizational level maintenance.

WORK CENTER	RATING	NEC
16A	AD, AMH, AMS	8391
16B	AE, AT	8391

(1) **Preventive Maintenance.** Preventive Maintenance includes preoperational and post-operational inspections, operational readiness testing, and corrosion control. Corrosion control is the major preventive maintenance effort.

(2) Corrective Maintenance. Corrective Maintenance is limited to minor flight line repairs including replacement of faulty consumables, troubleshooting, and removal and installation of Weapons Replaceable Assemblies (WRAs). Faulty WRAs will be sent to the Aircraft Intermediate Maintenance Department (AIMD) for repair.

b. Intermediate. Aviation Electrician's Mate (AE) and Aviation Electronics Technician (AT) personnel with NEC 8391 from Work Center 74C maintain the MK-105 MOD 4. Intermediate level corrective maintenance consists of isolating and verifying faulty WRAs and replacing faulty Shop Replaceable Assemblies (SRAs). Isolation and verification of faulty WRAs is performed using the Control Programmer Test Set (17-15ALM-156-1) and the Controller Test Set (17-15ALM-157-1), both currently onboard to support the MK-105 MOD 2 Magnetic Minesweeping System. Defective SRAs will be troubleshot using normal shop practices. SRAs beyond the capability of AIMD will be sent to the depot level for maintenance.

WORK CENTER	RATING	NEC
74C	AE, AT	8391

- **c. Depot.** Current planning is for government and designated civilian contractor facilities to perform depot level maintenance. Systems and components will be returned to the depot level under the Return Material for Repair program.
- **d. Interim Maintenance.** The contractor will not provide interim maintenance. The contractor will provide initial MK-105 MOD 4 training to fleet personnel. Upon completion of this training, existing maintenance personnel will be able to perform all required maintenance on the MK-105 MOD 4.

- **e. Life-Cycle Maintenance Plan.** Regular Overhaul for the MK-105 MOD 4 will be provided by a 48-month SDLM cycle conducted at the depot maintenance facility.
- **3. Manning Concept.** The MK-105 MOD 4 will replace the MK-105 MOD 2 Magnetic Minesweeping System. Due to system similarities and maintenance requirements, no changes are required to existing billet structures or to available skill levels. Organizational level maintenance functions are normally performed by personnel in the Aviation Machinist's Mate (AD), Aviation Structural Mechanic (Structures and Hydraulics) (AMS and AMH), AE, and AT ratings. Personnel in the AE and AT ratings with NEC 8391 normally perform intermediate level maintenance functions. Personnel in various ratings perform tactical Ground Support functions.
- **4. Training Concept.** Formal training is required to support the operational and maintenance aspects of the MK-105 MOD 4. Pilots and aircrew will receive operational training at AMCM Weapon Systems Training School (AWSTS), NS Norfolk, Virginia, as delineated in the MH-53E Navy Training Systems Plan, N88-NTSP-A-50-8417D/D. Actual training flights are conducted at the fleet squadron where the aircrews are assigned. Training for initial organizational and intermediate level maintenance personnel will be accomplished through contractor support. Follow-on maintenance training will be accomplished at MTU 1031, NAMTRAU, NS Norfolk, Virginia.
- **a. Initial Training.** Current plans call for initial training for both organizational and intermediate level maintenance to be conducted through contractor support. Upon activation of each site (Norfolk and Corpus Christi) contractor support personnel will provide six weeks of training consisting of formal instruction and hands-on training utilizing an operational MK-105 MOD 4 and associated support equipment.

Title MK-105 MOD 4 Initial (Introduction) Organizational Level Maintenance Course

Description This course provides first-degree organization level

maintenance training on the MK-105 MOD 4 Magnetic

Minesweeping System for instructors and cadre

maintenance personnel. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform organizational maintenance in a squadron

environment under limited supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with Computer-

Based Training (CBT).

Prerequisites AD, AE, AMH, AMS, or AT rating

Title MK-105 MOD 4 Structures and Hydraulic Systems
Organizational Level Maintenance Course

Description This course provides instructor and cadre maintenance

personnel with the skills, knowledge, and techniques required to perform organization level structures and hydraulic systems operation and maintenance on the MK-105 MOD 4 Magnetic Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform organizational structures and hydraulics maintenance in a squadron

environment under limited supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

Length 4 days (estimated)

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AMS or AMH rating

MK-105 MOD 4 Initial (Introduction) Organizational

Level Maintenance Course

Title MK-105 MOD 4 Electrical Systems Organizational Level Maintenance Course

Description This course provides instructor and cadre maintenance

personnel with the skills, knowledge, and techniques required to perform organization level electrical systems operation and maintenance on the MK-105 MOD 4 Magnetic Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform organizational electrical and electronics maintenance in a squadron environment under limited currenticion.

limited supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

Length 4 days (estimated)

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AE or AT rating

MK-105 MOD 4 Initial (Introduction) Organizational

Level Maintenance Course

Title MK-105 MOD 4 Power Plant Systems Organizational Level Maintenance Course

Description This course provides instructor and cadre maintenance

personnel with the skills, knowledge, and techniques required to perform organizational level power plant systems operation and maintenance on the MK-105 MOD 4 Magnetic Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform organizational power plant maintenance in a squadron environment under limited . . .

supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

Length 4 days (estimated)

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AD rating

MK-105 MOD 4 Initial (Introduction) Organizational

Level Maintenance Course

Title MK-105 MOD 4 Launch and Recovery Course

Description This course provides instructor and cadre maintenance

personnel with the skills, knowledge, and techniques required to perform launch and recovery of the MK-105

MOD 4 Magnetic Minesweeping System. Upon

completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform launch and recovery operations in a squadron environment under

limited supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AD, AE, AMH, AMS, or AT rating

MK-105 MOD 4 Initial (Introduction) Organizational

Level Maintenance Course

Title MK-105 MOD 4 Sled Captain Course

Description This course provides instructor and cadre maintenance

personnel with the skills, knowledge, and techniques required to perform sled captain duties and responsibilities on the MK-105 MOD 4 Magnetic Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform sled captain duties in a squadron environment under limited

supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

Length 3 days (estimated)

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AD, AE, AMH, AMS, or AT rating

MK-105 MOD 4 Initial (Introduction) Organizational

Level Maintenance Course

Title MK-105 MOD 4 Aircraft Rig/De-rig Course

Description This course provides personnel with the skills, knowledge,

and techniques required to properly install and uninstall the MK-105 MOD 4 Magnetic Minesweeping System related mission equipment for the MH-53E aircraft. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform organizational rig and de-rig procedures in a squadron environment under

limited supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

Length 1 day (estimated)

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AD, AE, AMH, AMS, AO, or AT rating

Title MK-105 MOD 4 Hydraulic Components Intermediate

Level Maintenance Course

Description This course provides personnel with the skills, knowledge,

and techniques required to perform intermediate level test and maintenance procedures on hydraulic components for the MK-105 MOD 4 Magnetic Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform

intermediate maintenance on hydraulic components in a

shop environment under limited supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AMH rating

Title MK-105 MOD 4 Electrical Components Intermediate Level Maintenance Course

Description This course provides personnel with the skills, knowledge,

and techniques required to perform intermediate level test and maintenance procedures on electrical components for the MK-105 MOD 4 Magnetic Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform intermediate maintenance on electrical components in a

shop environment under limited supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

Length 4 days (estimated)

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AE or AT rating

Title MK-105 MOD 4 Engine and Fuel Electrical Components Intermediate Level Maintenance Course

Description This course provides personnel with the skills, knowledge,

and techniques required to perform intermediate level test and maintenance procedures on engine and fuel electrical

components for the MK-105 MOD 4 Magnetic

Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform intermediate maintenance on engine and fuel electrical components in a shop environment under

limited supervision.

Location NS Norfolk, Virginia

NAS Corpus Christi, Texas

RFT date Norfolk: Complete

Corpus Christi: March 2002

TTE/TD Note: Due to no dedicated MK-105 MOD 4 training

devices, course length is directly dependent on the availability of MK-105 MOD 4 operational assets to be used for hands-on training in conjunction with CBT.

Prerequisites AE or AT rating

b. Follow-on Training. Follow-on training for maintenance and operator personnel will be conducted at MTU 1031, NAMTRAU, NS Norfolk and AWSTS, NS Norfolk, respectively. Pilot and Aircrew training information can be found in the MH-53E NTSP (N88-NTSP-A-50-8417D/D) and is not included in this NTSP. Current plans call for MTU 1031 to develop organizational and intermediate level courses as required from the source information supplied by the contractor.

Currently MTU 1031 conducts follow-on maintenance training for the MK-105 MOD 2. MOD 4 training is currently planned to begin in October 2001. MOD 2 training will continue through September 2001. Due to the extent of modifications to the operating systems of the MOD 2 to complete the MOD 4 configuration, it is anticipated that existing formal training courses for the MOD 2 will require complete rewrite.

Title	MK-105 MOD 4 Power Plants and Related Systems
	Organizational Maintenance

CIN C-601-XXX1

Model Manager ... MTU 1031, NAMTRAU, NS Norfolk, Virginia

Description This course provides maintenance personnel with the skills,

knowledge, and techniques required to perform

organizational level power plant systems operation and

maintenance on the MK-105 MOD 4 Magnetic

Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform organizational maintenance on power

plants and related systems in a squadron environment under

limited supervision.

Location MTU 1031, NAMTRAU, NS Norfolk, Virginia

Length TBD

RFT date October 2001

Skill identifier AD 8391

TTE/TD TBD

Prerequisite ° C-601-2011, Aviation Machinist's Mate Common Core Class A1

> ° C-601-2012, Aviation Machinist's Mate Helicopter Fundamentals Strand Class A1

Title MK-105 MOD 4 Structures and Hydraulic Organizational Maintenance

CIN C-602-XXX2

Model Manager ... MTU 1031 NAMTRAU, NS Norfolk, Virginia

Description This course provides maintenance personnel with the skills,

knowledge, and techniques required to perform organization level structures and hydraulic systems operation and maintenance on the MK-105 MOD 4 Magnetic Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform organizational maintenance

on structures and hydraulic systems in a squadron

environment under limited supervision.

Location MTU 1031, NAMTRAU, NS Norfolk, Virginia

Length TBD

RFT date October 2001

Skill identifier AMH, AMS 8391

TTE/TD TBD

Prerequisite ° C-603-0175, Aviation Structural Mechanic (Structures

and Hydraulics) Common Core Class A1

° C-603-0176, Aviation Structural Mechanic (Structures and Hydraulics) Organizational Level Maintenance Strand

Class A1

Title MK-105 MOD 4 Electrical Systems Organizational/ Intermediate Maintenance

CIN C-602-XXX3

Model Manager ... MTU 1031, NAMTRAU, NS Norfolk, Virginia

Description This course provides personnel with the skills, knowledge,

and techniques required to perform organizational and intermediate level maintenance and test procedures on electrical components for the MK-105 MOD 4 Magnetic Minesweeping System. Upon completion the student will have a thorough knowledge of the MK-105 MOD 4 and be able to perform organizational or intermediate maintenance on electrical components in an intermediate shop or

squadron environment under limited supervision.

Location MTU 1031, NAMTRAU, NS Norfolk, Virginia

Length TBD

RFT date October 2001

Skill identifier AE, AT 8391

TTE/TD TBD

Prerequisite As applicable to the specific rating:

° C-100-2020, Avionics Common Core Class A1

° C-602-2039, Aviation Electrician's Mate O Level Strand

Class A1

° C-100-2018, Avionics Technician O Level Class A1

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
AD 8391	° C-601-2011, Aviation Machinist's Mate Common Core Class A1 ° C-601-2012, Aviation Machinist's Mate Helicopter Fundamentals Strand Class A1
AE 8391	° C-100-2020, Avionics Common Core Class A1 ° C-602-2039, Aviation Electrician's Mate O Level Strand Class A1
AMH 8391	° C-603-0175, Aviation Structural Mechanic (Structures and Hydraulics) Common Core Class A1 ° C-603-0176, Aviation Structural Mechanic (Structures and Hydraulics) Organizational Level Maintenance Strand Class A1
AMS 8391	° C-603-0175, Aviation Structural Mechanic (Structures and Hydraulics) Common Core Class A1 ° C-603-0176, Aviation Structural Mechanic (Structures and Hydraulics) Organizational Level Maintenance Strand Class A1
AT 8391	° C-100-2020, Avionics Common Core Class A1 ° C-100-2018, Avionics Technician O Level Class A1

- **d.** Training Pipelines. No new training pipelines or tracks are required.
- I. ONBOARD (IN-SERVICE) TRAINING. MK-105 MOD 4 CBT will be incorporated into each of the Performance Support Systems (PSS) at each applicable AMCM squadron and AIMD. AMCM squadrons and AIMDs are equipped with stand-alone computer systems housing both Interactive Electronic Technical Manuals (IETMs) and CBT. Each AMCM squadron is outfitted with four PSSs, and each AIMD with three. The MK-105 MOD 4 transition software will be installed into these existing systems upon site activation. Ten additional PSS stations configured with up-to-date software and hardware will be delivered for added support. Existing MK-105 MOD 2 Personnel Qualification Standards (PQS) and Maintenance Training Improvement Program (MTIP) requirements will be reviewed and modified to reflect the MK-105 MOD 4 system by Commander, Helicopter Tactical Wing, U.S. Atlantic Fleet (COMHELTACWINGLANT) NS Norfolk. Currently CBT is reviewed and updated biannually through a revision and maintenance contract sponsored by PMS210.

- 1. Proficiency or Other Training Organic to the New Development. Proficiency training for the MK-105 MOD 4 will be provided through managed on-the-job training at each applicable command with support of the provided CBT. Onboard training will be consistent with qualitative assessment by MTIP.
- a. Maintenance Training Improvement Program. The Maintenance Training Improvement Program (MTIP) is used to establish an effective and efficient training system responsive to fleet training requirements. MTIP is a training management tool that, through diagnostic testing, identifies individual training deficiencies at the organizational and intermediate levels of maintenance. MTIP is the comprehensive testing of one's knowledge. It consists of a bank of test questions managed through automated data processing. The Deputy Chief of Staff for Training assisted in development of MTIP by providing those question banks (software) already developed by the Navy. MTIP was implemented per OPNAVINST 4790.2 series. MTIP allows increased effectiveness in the application of training resources through identification of skills and knowledge deficiencies at the activity, work center, or individual technician level. Refresher training is concentrated where needed to improve identified skill and knowledge shortfalls. MTIP will be replaced by Aviation Maintenance Training Continuum System (AMTCS). Current planning is for AMTCS to begin initial implementation in third quarter FY00.
- b. Aviation Maintenance Training Continuum System. AMTCS will provide career path training to the Sailor or Marine from their initial service entry to the end of their military career. AMTCS is planned to be an integrated system that will satisfy the training and administrative requirements of both the individual and the organization. The benefits will be manifested in the increased effectiveness of the technicians and the increased efficiencies of the management of the training business process. By capitalizing on technological advances and integrating systems and processes where appropriate, the right amount of training can be provided at the right time, thus meeting the CNO's mandated "just-in-time" training approach.

Technology investments enable the development of several state-of-the-art training and administrative tools: Computer-Based Training (CBT) for the technicians in the Fleet in the form of Interactive Courseware (ICW) with Computer Managed Instruction (CMI) and Computer Aided Instruction (CAI) for the schoolhouse.

Included in the AMTCS development effort is the Aviation Maintenance Training Continuum System - Software Module (ASM), which provides testing [Test and Evaluation (TEV)], recording [Electronic Training Jacket (ETJ)], and a Feedback system. The core functionality of these AMTCS tools are based and designed around the actual maintenance-related tasks the technicians perform, and the tasks are stored and maintained in a Master Task List (MTL) data bank. These tools are procured and fielded with appropriate COTS hardware and software, i.e., Fleet Training Devices (FTD) - Laptops, PCs, Electronic Classrooms (ECR), Learning Resource Centers (LRC), operating software, and network software and hardware.

Upon receipt of direction from OPNAV (N789H), AMTCS is to be implemented and the new tools integrated into the daily training environment of all participating aviation activities and supporting elements. AMTCS will serve as the standard training system for aviation maintenance

training within the Navy and Marine Corps, and is planned to supersede the existing MTIP and Maintenance Training Management and Evaluation Program (MATMEP) programs.

- **2. Personnel Qualification Standards.** Existing MK-105 MOD 2 PQS requirements will be reviewed and modified to reflect the MK-105 MOD 4 system by COMHELTACWINGLANT.
 - 3. Other Onboard or In-Service Training Packages. None.

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N00024-94-G-6381 N00024-96-C-6332 N00024-96-G-6342 N00167-97-C-0015 N00167-97-C-0053 N00024-98-C-6302 N00024-98-G-6313	EDO Corporation, Marine and Aircraft Systems (CAGE/FSCM Code 82340)	1500 New Horizons Boulevard North Amityville, NY 11701-1130 http://www.edocorp.com/
N00421-94-D-0160	Logistic Services International	6200 Lake Gray Boulevard Jacksonville, FL 32244-5826

- **2. Program Documentation.** An Integrated Logistics Support Plan (ILSP) and Maintenance Plan (MP) for the MK-105 MOD 4 have been developed and distributed by PMS 210.
- 3. Technical Data Plan. Appropriate technical information and supply support data to complete necessary organizational and intermediate level maintenance actions on the MK-105 MOD 4 will be developed as IETMs and be included in the PSS. The PSS is a computer system that includes appropriate maintenance IETMs and CBT required to maintain a specific weapon system to the level specified. The MK-105 MOD 4 PSS is being prepared to support both the organizational and intermediate levels of maintenance. The PSS will be located within applicable work centers and provide personnel with direct access to maintenance instructions and quality training. The technical information contained in the PSS is verified by the Naval Air Technical Data and Engineering Service Command with the participation of fleet representatives. Reference element IV.B.3 within this NTSP for applicable IETMs.
- **4. Test Sets, Tools, and Test Equipment.** A new Engine Simulator Test Set is being developed. The following MK-105 MOD 2 Test Sets will be modified as required for use on the MK-105 MOD 4:

- AN/ALM-156 Control Programmer Test Set (P/N 80671-1)
- AN/ALM-157 Controller Test Set (P/N 80670-1)
- AN/ALM-158 Generator Set Test Set (P/N 80672-1)
- AN/ALM-159 Platform Electronics Test Set (P/N 80673-1
- **5. Repair Parts.** Repair Parts are listed in the MK-105 MOD 4 MP AM-042. The Material Support Date is projected for September 2002. The Navy Support Date is TBD.
 - **6. Human Systems Integration.** Not applicable (NA)

K. SCHEDULES

1. Schedule of Events

a. Installation and Delivery Schedules. No installation is required. The delivery schedule is under revision. For current delivery schedule information contact PMS210. Activities scheduled to receive the MK-105 MOD 4 are as follows:

DELIVERY SCHEDULE (NUMBER OF SLEDS)

UNIT	PRIOR	FY00	FY01	FY02	FY03	FY04	TOTAL
HM-14	0	3	2	0	0	0	5
HM-15	0	0	0	2	2	0	4
CSS	1	0	0	0	0	0	1

- **b. Ready For Operational Use Schedule.** Upon delivery and after an acceptance inspection, the MK-105 MOD 4 is Ready For Operational Use.
 - c. Time Required to Install at Operational Sites. NA
 - d. Foreign Military Sales and Other Source Delivery Schedule. NA
- **e.** Training Device and Delivery Schedule. No dedicated Technical Training Equipment or Training Devices are planned at this time. An operational MK-105 MOD 4 will be provided to serve as the Technical Training Equipment for initial and follow-on training. The PSS will include IETMs and CBT to support organizational and intermediate levels of maintenance. Short training lesson segments will be integrated within the IETMs.

L. GOVERNMENT FURNISHED EQUIPMENT AND CONTRACTOR FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Integrated Logistics Support Plan	ILSP AM-042	PMS210	Approved Nov 99
Logistics Support Analysis (301)	NA	PMS210	Approved Aug 99
Logistics Support Analysis (401)	NA	PMS210	Approved Nov 99
MK-105 MOD 4 Maintenance Plan	MP AM-042	PMS210	Approved Jun 99
MH-53E NTSP	N88-NTSP-A-50-8417D/A	PMA261	Approved Feb 01

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the MK-105 MOD 4 Magnetic Minesweeping System and, therefore, are not included in Part II of this NTSP:

II.A. Billet Requirements

- II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule
- II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities
- II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities

PART II - BILLET AND PERSONNEL REQUIREMENTS

II.A. BILLET REQUIREMENTS

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: PMS210 **DATE**: 12/15/99

ACTIVITY, UIC	PFYs	CFY00	FY01	FY02	FY03	FY04						
OPERATIONAL ACTIVITIES - NAVY												
HM-14 53827	0	1	0	0	0	0						
HM-15 55201	0	0	0	1	0	0						
TOTAL:	0	1	0	1	0	0						
FLEET SUPPORT ACTIVITIES - NAVY												
AIMD MCS 12, USS Inchon 20009	0	1	0	0	0	0						
AIMD NAS Oceana Air Det 44325	0	1	0	0	0	0						
AIMD Truax Field NAS Corpus	30244	0	0	0	1	0 0						
CHTWL 44890	1	0	0	0	0	0						
TOTAL:	1	2	0	1	0	0						

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASII	NG INCREMENT	BILLE OFF		DESIG/ RATING	PNEC / SNEC PMOS / SMOS
OPERATIONAL ACTIVI	TIES - NAVY				
HM-14 ACDU	53827	0 0 0 0 0 0 0 0	1 1 1 1 1 2 2 2 2 2 2 3 2	AD1 AD2 AE1 AE2 AMH1 AMH2 AMS1 AMS2 AT1 AT2 AT2	8391 8391 8391 8391 8391 8391 8391 8391
TAR		0 0 0 0	1 2 2 2 2	AE1 AE2 AMH1 AT1 AT2	8391 8391 8391 8391 8391
SELRES		0	1	AMS2	8391
ACTIVITY TOTAL:		0	28		
HM-15 ACDU	55201	0 0 0 0 0 0 0 0 0 0	1 1 1 3 1 2 2 2 2 2 2 3 2	AD1 AD2 AE1 AE2 AMH1 AMH2 AMS1 AMS2 AT1 AT2 AT2 AE1 AE2 AMH1 AT1	8391 8391 8391 8391 8391 8391 8391 8391
ACTIVITY TOTAL:		0	2 29	AT2	8391

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLET OFF I		DESIG/ RATING	PNEC / SNEC PMOS / SMOS
FLEET SUPPORT ACTIVITIES – NAVY				
AIMD MCS 12,USS INCHON, 20009 ACDU	0 0	1 1	AE1 AT1	8391 9526 8391
ACTIVITY TOTAL:	0	2		
AIMD NAS OCEANA AIR DET NORFOLK, 44 ACDU	325 0 0 0	2 4 1	AE2 AT2 AT2	8391 8391 8391 9527
ACTIVITY TOTAL:	0	7		
CHTWL, 44890 ACDU	0 0 0	1 1 1	AEC AMHC AMSC ATC	8377 8391 8391 8391 8391
ACTIVITY TOTAL:	0	4		
AIMD Truax Field NAS Corpus Christi, 30244 ACDU	0 0 0	1 1 1	AT1 AT2 AE2	8391 8391 8391 9527
ACTIVITY TOTAL:	0	3		

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF EN		Y00 ENL	FY OFF	01 ENL	FY OFF	02 ENL	FY OFF	03 ENL	FY(OFF	04 ENL
NAVY OP AD1 AD2 AE1 AE2 AMH1 AMH2 AMS1 AMS2	8391 8391 8391 8391 8391 8391 8391 8391	0 0 0 0 0 0 0 0 0	DDU 2 0 2 0 4 0 2 0 4 0 4 0 4 0 0	0 0 0 0 0 0								
AT1 AT2 AT2	8391 8391 8391 9526	0 0 0	4 0 6 0 4 0	0 0 0								
NAVY OP AE1 AE2 AMH1 AT1 AT2	ERATIONAL ACT 8391 8391 8391 8391 8391	O O O O O O O	AR 2 0 4 0 4 0 4 0 4 0	0 0 0 0								
NAVY OP AMS2	ERATIONAL ACT 8391	IVITIES - SE 0	ELRES 1 0	0	0	0	0	0	0	0	0	0
NAVY FLE AE1 AE2 AEC AMHC AMSC AT1 AT2 AT2 ATC	EET SUPPORT AG 8391 9526 8391 9527 8391 9527 8391 8391 8391 8391 8391 8391 8391	O O O O O O O O O O O O O O O O O O O	ACDU 1 0 4 0 1 0 1 0 1 0 2 0 3 0 1 0 1 0 0	0 0 0 0 0 0 0								
SUMMAR	Y TOTALS:											
NAVY OP	ERATIONAL ACT		CDU 38 0	0	0	0	0	0	0	0	0	0
NAVY OP	ERATIONAL ACT		AR 18 0	0	0	0	0	0	0	0	0	0
NAVY OP	ERATIONAL ACT	IVITIES - SE 0	ELRES 1 0	0	0	0	0	0	0	0	0	0
NAVY FLE	EET SUPPORT A		ACDU 16 0	0	0	0	0	0	0	0	0	0

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG PNEC/SNEC		PFYs	;	CFY00	FY	FY01		FY02		FY03		04
RATING	PMOS/SMOS	OFF E	ENL O	FF ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
GRAND	TOTALS											
NAVY - A	ACDU		56	0		0		0		0		0
NAVY - 7	ΓAR		18	0		0		0		0		0
NAVY - S	SELRES		1	0		0		0		0		0

II.A.3. TRAINING ACTIVITIES INSTRUCTOR AND SUPPORT BILLET REQUIREMENTS

DESIG RATING		C/SNEC S/SMOS		Ys ENL	CF OFF	Y00 ENL	F\ OFF	'01 ENL	FY OFF	'02 ENL	FY OFF	03 ENL	FY OFF	'04 ENL
INSTRUCT	OR BILL	ETS												
TRAINING ACTIVITY, LOCATION, UIC: MTU 1031 NAMTRAU Norfolk, 66046														
ACDU														
AD1	8391	9502	0	2	0	2	0	2	0	2	0	2	0	2
AE2	8391	9502	0	2	0	2	0	2	0	2	0	2	0	2
ATC	8391	9502	0	1	0	1	0	1	0	1	0	1	0	1
AT2	8391	9502	0	1	0	1	0	1	0	1	0	1	0	1
AMH2	8391	9502	0	1	0	1	0	1	0	1	0	1	0	1
AMS1	8391	9502	0	1	0	1	0	1	0	1	0	1	0	1
AMS2	8391	9502	0	1	0	1	0	1	0	1	0	1	0	1
AMSC	8391	9502	0	1	0	1	0	1	0	1	0	1	0	1
TOTAL:			0	10	0	10	0	10	0	10	0	10	0	10

II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY, USN/		PFYs		CF	CFY00		FY01		FY02		FY03		04
LOCATION, UIC	USMC	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
MTU 1031, NAMT	RAU, 66046												
	NAVY		2.4		2.4		2.4		2.4		2.4		2.4
GRAND TOTALS	:												
			2.4		2.4		2.4		2.4		2.4		2.4

Note: Currently no formal training exists for the MK-105 MOD 4, the information above has been estimated based on current training information available for the MK-105 MOD 2.

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ PMOS/SMOS RATING PNEC/SNEC	BILLET BASE	CFY +/- (FY00 +/- CUM		FY01 +/- CUM		FY02 +/- CUM		FY(+/- (
a. OFFICER – NAVY	NA											
b. ENLISTED - NAVY												
Operational Billets ACDU and AD1 8391	TAR 2	0	2	0	2	0	2	0	2	0	2	
AD2 8391	2	0	2	0	2	0	2	0	2	0	2	
AE1 8391	4	0	4	0	4	0	4	0	4	0	4	
AE2 8391 AMH1 8391	8 6	0	8 6	0 0	8 6	0	8 6	0 0	8 6	0 0	8 6	
AMH2 8391	4	0	4	0	4	0	4	0	4	0	4	
AMS1 8391	4	0	4	0	4	0	4	0	4	0	4	
AMS2 8391 AT1 8391	4 8	0	4 8	0 0	4 8	0 0	4 8	0 0	4 8	0	4 8	
AT2 8391	10	0	0 10	0	o 10	0	0 10	0	0 10	0	0 10	
AT2 8391 9526	4	0	4	0	4	0	4	0	4	0	4	
Fleet Support Billets ACDU and TAR												
AE1 8391 9526	1	0	1	0	1	0	1	0	1	0	1	
AE2 8391	4	0	4	0	4	0	4	0	4	0	4	
AE2 8391 9527 AEC 8377 8391	1 1	0	1 1	0 0	1 1	0	1 1	0 0	1 1	0 0	1 1	
AMHC 8391	1	0	1	0	1	0	1	0	1	0	1	
AMSC 8391	1	0	1	0	1	0	1	0	1	0	1	
AT1 8391 AT2 8391	2 3	0	2 3	0 0	2	0	2	0	2 3	0 0	2	
AT2 8391 AT2 8391 9527	3 1	0	ა 1	0	ა 1	0	ა 1	0 0	ა 1	0	3 1	
ATC 8391	1	0	1	0	1	0	1	0	1	0	1	
Chargeable Student Billets AC	DU and TAR											
J	2	0	2	0	2	0	2	0	2	0	2	
SELRES Billets												
AMS2 8391	1	0	1	0	1	0	1	0	1	0	1	
TOTAL NAVY ENLISTED BIL	LETS											
Operational	56	0	56	0	56	0	56	0	56	0	56	
Fleet Support	16	0	16	0	16	0	16	0	16	0	16	
SELRES	1	0	1	0	1	0	1	0	1	0	1	
c. OFFICER – USMC	Not Applicable											
d. ENLISTED – USMC	Not Applicable											

II.B. PERSONNEL REQUIREMENTS

II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

CIN, COURSE TITLE: C-601-XXX1, MK-105 MOD 4 Power Plants and Related Systems Organizational Maintenance

COURSE LENGTH: 8.4 Weeks TOUR LENGTH: 36 Months ATTRITION FACTOR: Navy: 10% BACKOUT FACTOR: 0.16

TRAINING	ACDU/TAR	CFY00	FY01	FY02	FY03	FY04
ACTIVITY SOURCE	SELRES	OFF ENL				
MTU 1031, NAMTRAU						
NAVY	ACDU	4	4	4	4	4
	TAR	0	0	0	0	0
	TOTAL:	4	4	4	4	4

CIN, COURSE TITLE: C-602-XXX2, MK-105 MOD 4 Structures and Hydraulic Systems Organizational Maintenance

COURSE LENGTH: 8.4 Weeks TOUR LENGTH: 36 Months ATTRITION FACTOR: Navy: 10% BACKOUT FACTOR: 0.17

TRAINING	ACDU/TAR	CFY00	FY01	FY02	FY03	FY04
ACTIVITY SOURCE	SELRES	OFF ENL				
MTU 1031, NAMTRAU						
NAVY	ACDU	16	16	16	16	16
	TAR	4	4	4	4	4
	TOTAL:	20	20	20	20	20

CIN, COURSE TITLE: C-602-XXX3, MK-105 MOD 4 Electrical Systems Organizational/Intermediate Maintenance

COURSE LENGTH: 8.6 Weeks TOUR LENGTH: 36 Months ATTRITION FACTOR: Navy: 10% BACKOUT FACTOR: 0.17

TRAINING ACTIVITY SOURCE MTU 1031, NAMTRAU	ACDU/TAR SELRES	CFY00 OFF ENL	FY01 OFF ENL	FY02 OFF ENL	FY03 OFF ENL	FY04 OFF ENL
NAVY	ACDU	12	12	12	12	12
	TAR	6	6	6	6	6
	TOTAL:	18	18	18	18	18

Note: Currently no formal training exists for the MK-105 MOD 4, the information above has been estimated based on current training information available for the MK-105 MOD 2.

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the MK-105 MOD 4 and therefore, are not included in Part III of this NTSP.

III.A.2.a. Existing Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

PART III - TRAINING REQUIREMENTS

There are no formal dedicated training devices available at this time for any of the initial courses listed. All training will be accomplished with operational assets. Course lengths are directly dependent on the availability of an activity's operational MK-105 MOD 4 and associated support equipment.

III.A.1. INITIAL TRAINING REQUIREMENTS

COURSE TITLE: MK-105 MOD 4 Initial Organizational (Introduction) Level Maintenance Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 2 Days

ACTIVITY DESTINATIONS: HM-14, MTU 1031

	BEGIN		SI	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	53827	Complete	0	30	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: HM-15

	BEGIN		S1	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	55201	Mar 02	0	30	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Structures and Hydraulic Systems Organizational Level Maintenance Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 4 Days

ACTIVITY DESTINATIONS: HM-14, MTU 1031

	BEGIN		51	STUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	53827	Complete	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: HM-15

		BEGIN	ST	UDENTS			
LOCATION, UIC		DATE	OFF	ENL	CIV		
Corpus Christi	55201	Mar 02	0	10	0	INPUT	
•			0	0	0	AOB	
			()	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Electrical Systems Organizational Level Maintenance Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 4 Days

ACTIVITY DESTINATIONS: HM-14, MTU 1031

	BEGIN		S7	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	53827	Complete	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: HM-15

		BEGIN		FUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	55201	Mar 02	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Power Plant Systems Organizational Level Maintenance Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 4 Days

ACTIVITY DESTINATIONS: HM-14, MTU 1031

	BEGIN		S1	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	53827	Complete	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: HM-15

	BEGIN		Sī	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	55201	Mar 02	0	10	0	INPUT
·			0	0	0	AOB
			0	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Launch and Recovery Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 2 Days

ACTIVITY DESTINATIONS: HM-14, MTU 1031

		BEGIN	S1	UDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	53827	Complete	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: HM-15

		BEGIN	S1	UDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	55201	Mar 02	0	10	0	INPUT
•			0	0	0	AOB
			0	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Sled Captain Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 3 Days

ACTIVITY DESTINATIONS: HM-14, MTU 1031

		BEGIN	SI	UDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	53827	Complete	0	6	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: HM-15

		BEGIN	S7	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	55201	Mar 02	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Aircraft Rig/De-rig Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 1 Day

ACTIVITY DESTINATIONS: HM-14, MTU 1031

		BEGIN	ST	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	53827	Complete	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: HM-15

		BEGIN	S1	UDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	55201	Mar 02	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Hydraulic Components Intermediate Level Maintenance Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 2 Days

ACTIVITY DESTINATIONS: AIMD, NAS Oceana Air Det Norfolk, MTU 1031

		BEGIN	Sī	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	44325	Complete	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: AIMD, Corpus Christi, Texas

		BEGIN	S1	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	30244	Mar 02	0	4	0	INPUT
·			0	0	0	AOB
			0	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Electrical Components Intermediate Level Maintenance Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 4 Days

ACTIVITY DESTINATIONS: AIMD, NAS Oceana Air Det Norfolk, MTU 1031

		BEGIN	S7	TUDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	44325	Complete	0	10	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: AIMD, Corpus Christi, Texas, AIMD, USS Inchon

		BEGIN	Sī	UDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	30244	Mar 02	0	4	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

COURSE TITLE: MK-105 MOD 4 Engine and Fuel Electrical Components Intermediate Level Maintenance

Course

COURSE DEVELOPER: D. P. Associates Inc. COURSE INSTRUCTOR: D. P. Associates Inc.

COURSE LENGTH: 4 Days

ACTIVITY DESTINATIONS: AIMD, NAS Oceana Air Det Norfolk, MTU 1031

		BEGIN	ST	UDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Norfolk	44325	Complete	0	10	0	INPUT

0	0	0	AOB
0	0	0	CHARGEABLE

ACTIVITY DESTINATIONS: AIMD, Corpus Christi, Texas, AIMD, USS Inchon

		BEGIN	Sī	UDENTS		
LOCATION, UIC		DATE	OFF	ENL	CIV	
Corpus Christi	30244	Mar 02	0	4	0	INPUT
			0	0	0	AOB
			0	0	0	CHARGEABLE

III.A.2. FOLLOW-ON TRAINING

III.A.2.b. PLANNED COURSES

CIN, COURSE TITLE: C-601-XXX1, MK-105 MOD 4 Power Plants and Related Systems Organizational Maintenance

TRAINING ACTIVITY: MTU 1031

LOCATION, UIC: NS Norfolk, 66046

SOURCE: Navy STUDENT CATEGORY: ACDU - TAR

CF.	Y00	FY	01	FY	02	FY	03	FY	04	
OFF	ENL									
	0		0		2		2		2	ATIR
	0		0		2		2		2	Output
	0		0		0.1		0.1		0.1	AOB
	0		0		0.1		0.1		0.1	Chargeable

COURSE TITLE: C-602-XXX2, MK-105 MOD 4 Structures and Hydraulics Systems Organizational Maintenance

TRAINING ACTIVITY: MTU 1031

LOCATION, UIC: NS Norfolk, 66046

SOURCE: Navy STUDENT CATEGORY: ACDU - TAR

CFY00		FY01		FY02		FY03		FY04		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	0		0		8		8		8	ATIR
	0		0		7		7		7	Output
	0		0		1.2		1.2		1.2	AOB
	0		0		1.2		1.2		1.2	Chargeable

CIN, COURSE TITLE: C-602-XXX3, MK-105 MOD 4 Electrical Systems Organizational/Intermediate Maintenance

TRAINING ACTIVITY: MTU 1031

LOCATION, UIC: NS Norfolk, 66046

SOURCE: Navy STUDENT CATEGORY: ACDU - TAR

CF'	CFY00		FY01		FY02		FY03		04	
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	0		0		7		7		7	ATIR
	0		0		7		7		7	Output
	0		0		1.1		1.1		1.1	AOB
	0		0		1.1		1.1		1.1	Chargeable

Note: Currently no formal training exists for the MK-105 MOD 4, the information above has been estimated based on current training information available for the MK-105 MOD 2.

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the MK-105 MOD 4 and therefore, are not included in Part IV of this NTSP.

IV.A. Training Hardware

- IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE
- IV.A.2. Training Devices

Note: Information for the above in support of Formal Training is currently not available. Training Hardware for the MK-105 MOD 4 will be identified during curriculum development. This information will be included in future updates to this NTSP, as the information becomes available.

Note: The PSS, which houses the Computer-Based Training (CBT) lessons, and one operational asset (MK-105 MOD 4) with associated support equipment will serve as the only technical training equipment required at this time to support Initial training.

IV.C. Facility Requirements

- IV.C.1. Facility Requirements Summary (Space/Support) By Activity
- IV.C.2. Facility Requirements Detailed by Activity and Course
- IV.C.3. Facility Project Summary by Program

Note: Additional facility requirements to support MK-105 MOD 4 training are not required. MK-105 MOD 4 training will utilize the same facilities that are currently used for training the MK-105 MOD 2.

IV.B. COURSEWARE REQUIREMENTS

IV.B.1. TRAINING SERVICES

COURSE/TYPE OF TRAINING	SCHOOL LOCATION, UIC	NO. OF PERSONNEL	MAN WEEKS REQUIRED	DATE Begin
MK-105 MOD 4 Initial (Introduction) Organizational Level Maintenance Course	HM-14 53827	2	0.8	Complete
MK-105 MOD 4 Initial (Introduction) Organizational Level Maintenance Course	HM-15 55201	2	0.8	Mar 02
MK-105 MOD 4 Structures and Hydraulic Systems Organizational Level Maintenance Course	HM-14 53827	2	1.6	Complete
MK-105 MOD 4 Structures and Hydraulic Systems Organizational Level Maintenance Course	HM-15 55201	2	1.6	Mar 02
MK-105 MOD 4 Electrical Systems Organizational Level Maintenance Course	HM-14 53827	2	1.6	Complete
MK-105 MOD 4 Electrical Systems Organizational Level Maintenance Course	HM-15 55201	2	1.6	Mar 02
MK-105 MOD 4 Power Plant Systems Organizational Level Maintenance Course	HM-14 53827	2	1.6	Complete
MK-105 MOD 4 Power Plant Systems Organizational Level Maintenance Course	HM-15 55201	2	1.6	Mar 02
MK-105 MOD 4 Launch and Recovery Course	HM-14 53827	2	0.8	Complete
MK-105 MOD 4 Launch and Recovery Course	HM-15 55201	2	0.8	Mar 02
MK-105 MOD 4 Sled Captain Course	HM-14 53827	2	1.2	Complete
MK-105 MOD 4 Sled Captain Course	HM-15 55201	2	1.2	Mar 02
MK-105 MOD 4 Aircraft Rig/De-rig	HM-14 53827	2	0.4	Complete
MK-105 MOD 4 Aircraft Rig/De-rig	HM-15 55201	2	0.4	Mar 02

IV.B.1. TRAINING SERVICES

COURSE/TYPE OF TRAINING	SCHOOL LOCATION, UIC	NO. OF PERSONNEL	MAN WEEKS REQUIRED	DATE BEGIN
MK-105 MOD 4 Hydraulic Components Intermediate Level Maintenance Course	AIMD NAS Corpus Chris 30244	ti 2	0.8	Mar 02
MK-105 MOD 4 Hydraulic Components Intermediate Level Maintenance Course	AIMD NAS Oceana Air D Norfolk 44325	et 2	0.8	Complete
MK-105 MOD 4 Electrical Components Intermediate Level Maintenance Course	AIMD USS Inchon 20009	2	1.2	Mar 02
MK-105 MOD 4 Electrical Components Intermediate Level Maintenance Course	AIMD NAS Corpus Chris 30244	ti 2	1.2	Mar 02
MK-105 MOD 4 Electrical Components Intermediate Level Maintenance Course	AIMD NAS Oceana Air D Norfolk 44325	et 2	1.2	Complete
MK-105 MOD 4 Engine and Fuel Electrical Components Intermediate Level	AIMD USS Inchon 20009	2	0.8	Mar 02
MK-105 MOD 4 Engine and Fuel Electrical Components Intermediate Level	AIMD NAS Corpus Chris 30244	ti 2	0.8	Mar 02
MK-105 MOD 4 Engine and Fuel Electrical Components Intermediate Level	AIMD NAS Oceana Air D Norfolk 44325	et 2	0.8	Complete

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

The MK-105 MOD 4 technical publications will be produced, distributed, and supported in an IETMs format, including software and hardware support. Curricula materials and training aids will be developed by MTU 1031, NAMTRAU, Norfolk upon receipt of technical source data.

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: C-601-XXX1, MK-105 MOD 4 Power Plants and Related Organizational Maintenance

TRAINING ACTIVITY: MTU 1031 NAMTRAU **LOCATION, UIC:** NS Norfolk, 66046

TECHNICAL MANUAL NUMBER, TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NA 11-80MSB-2-5 MK-105 MOD 4 Power Plant Systems Maintenance Instructions, O & I Level /w IPB	CD ROM	2	May 01	Complete
NA 11-600-28-6-3 Special/Preservation/Conditional, Minesweeping Gear, Magnetic, MK 105 MOD 4	CD ROM	2	May 01	Complete
NA 11-80MSB-2-1 MK-105 MOD 4 General Information and Servicing Instructions	CD ROM	2	May 01	Complete
NA 19-1-559 MK-105 MOD 4 Peculiar Support Equipment Maintenance Instructions, O & I Level /w IPB	CD ROM	2	May 01	Complete

CIN, COURSE TITLE: C-602-XXX2, MK-105 MOD 4 Structures and Hydraulic Systems Organizational Maintenance

TRAINING ACTIVITY: MTU 1031 NAMTRAU LOCATION, UIC: NS Norfolk, 66046

TECHNICAL MANUAL NUMBER, TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NA 11-80MSB-2-3 MK-105 MOD 4 Hydraulic Systems Maintenance Instructions, O & I Level /w IPB	CD ROM	2	May 01	Complete
NA 11-80MSB-2-2 MK-105 MOD 4 Structures Systems Maintenance Instructions, O & I Level /w IPB	CD ROM	2	May 01	Complete
NA 11-600-28-6-3 Special/Preservation/Conditional, Minesweeping Gear, Magnetic, MK 105 MOD 4	CD ROM	2	May 01	Complete
NA 11-80MSB-2-1 MK-105 MOD 4 General Information and Servicing Instructions	CD ROM	2	May 01	Complete
NA 19-1-559 MK-105 MOD 4 Peculiar Support Equipment Maintenance Instructions, O & I Level /w IPB	CD ROM	2	May 01	Complete

CIN, COURSE TITLE: C-602-XXX3, MK-105 MOD 4 Electrical Systems Organizational/Intermediate Maintenance

TRAINING ACTIVITY: MTU 1031 NAMTRAU **LOCATION, UIC:** NS Norfolk, 66046

TECHNICAL MANUAL NUMBER, TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NA 11-80MSB-2-4 MK-105 MOD 4 Electrical and Electronic Maintenance Instructions, O & I Level /w IPB	CD ROM	2	May 01	Complete
NA 11-600-28-6-3 Special/Preservation/Conditional, Minesweeping Gear, Magnetic, MK 105 MOD 4	CD ROM	2	May 01	Complete
NA 11-80MSB-2-1 MK-105 MOD 4 General Information and Servicing Instructions	CD ROM	2	May 01	Complete
NA 19-1-559 MK-105 MOD 4 Peculiar Support Equipment Maintenance Instructions, O & I Level /w IPB	CD ROM	2	May 01	Complete

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
DA	Promulgated Draft NTP for review/comment	5/98	Completed
DA	Submitted Draft ILS Master Plan	9/98	Completed
DA	Promulgated ILS Master Plan	2/99	Completed
DA	Submit Preliminary Draft NTSP	4/99	Completed
DA	Submit Proposed NTSP	4/00	Completed
TSA	Conduct Initial Training (HM-14)	4/01	Completed
TSA	Conduct Initial Training (AIMD Norfolk)	4/01	Completed
TSA	Conduct Initial Training (MTU 1031)	4/01	Completed
OPO	Approve NTSP	4/01	Completed
DA	Deliver Curricula Materials	5/01	Pending
DA	Deliver PSS Software	5/01	Pending
DA	MK-105 MOD 4 Fleet Introduction	5/01	Pending
DA	Provide final provisioning technical documentation	5/01	Pending
DA	Begin Follow-on Training	10/01	Pending
TSA	Conduct Initial Training (HM-15)	3/02	Pending
TSA	Conduct Initial Training (AIMD Corpus Christi)	3/02	Pending
TSA	Conduct Initial Training (USS Inchon, AIMD)	3/02	Pending
DA	Achieve MSD	FYO2	Pending

PART VI - DECISION ITEMS/ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED

COMMAND ACTION

DUE DATE

STATUS

None

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